ecology and environment, inc.
International Specialists in the Environment

350 Sansome Street #300,
San Francisco, California 94104
Tel: (415) 981-2811, Fax: (415) 981-0801

June 30, 1997

U.S. Environmental Protection Agency
Emergency Response Office
75 Hawthorne Street
San Francisco, CA 94105

START: 099706-011
TDD: 09-9706-0001a
PAN: 0189PHRZXX

Attention: Karen Nelson, START Project Officer

Subject: **Phoenix Hydrocarbons, Maricopa County, Arizona** (Latitude: 33° 30' 39" Longitude: 112° 5' 0")

Introduction

On May 28, 1997, the Superfund Technical Assessment and Response Team (START) was directed by the U.S. Environmental Protection Agency (EPA) Region IX Emergency Response Office (ERO) to perform a fugitive vapor assessment of a high-rise building in Phoenix, Maricopa County, Arizona. EPA On-Scene Coordinator (OSC) Donn Zuroski tasked the START with investigating the extent of organic vapor migration via underground conduits from the property to surrounding businesses.

Site History

The site, located at One East Camelback Road, Phoenix, Arizona, (see Figure 1), is an eleven story office building which accommodates approximately 500 tenants on a daily basis. Before construction of the building in 1983, the general groundwater table was located 110 feet below ground surface (bgs). In 1989, groundwater started seeping into the building's 5 level subterranean parking garage, approximately 50 feet bgs. A subsequent study conducted by the property owners indicated that the groundwater in the area had risen to 58 feet bgs. The groundwater was also found to be contaminated with various hydrocarbons, including BTEX, TPH, and chlorinated solvents. The owners of the site began treating the infiltrating groundwater in 1993, by using a system of sumps to pump the contaminated water to a carbon filter system, which is also located in the subterranean parking garage.

In March 1997, attorneys wrote a letter on behalf of the owners of the property to Jan Carlson, USEPA Region IX, requesting assistance with the problem of the rising groundwater. The possibility of the contaminated groundwater rising into the vadose zone and fugitive organic

vapors migrating via sewer lines or other conduits to businesses surrounding the site was mentioned in this letter. The USEPA Region IX Emergency Response Office (ERO) was then contacted to assess the situation.

Site Activities

START member John Gregory arrived on-site at the One East Camelback property on June 6, 1997, and met with OSC Zuroski and Dale Anderson of the Arizona Department of Environmental Quality (ADEQ) for a discussion of planned site activities. Air monitoring was planned for utility vaults, storm drains, sanitary sewers, and other accessible subterranean service boxes in the area surrounding One East Camelback. This monitoring consisted of measuring volatile organics with a Toxic Vapor Analyzer (TVA), which includes Flame Ionization Detector (FID) and Photo Ionization Detector (PID) readings, and a Passport personal gas monitor, which includes Lower Explosive Limit (LEL), percent oxygen ($\%O_2$), and carbon monoxide (CO) readings. D. Anderson requested that air monitoring also be done in the parking garage.

The START calibrated both instruments and started monitoring activities. TVA and Passport readings were taken at 32 locations, some at multiple depths, surrounding the site. Readings were also taken at 9 locations in the parking garage. Monitoring locations in the area surrounding the site were chosen based on availability and proximity to the property. Results are summarized in Table 1. Sample locations for areas surrounding the site are given in Figure 2. The calibration of both instruments was checked midway through the monitoring activities and again at the end of monitoring.

Conclusions

Based on air monitoring results it appeared to the START and OSC Zuroski that there was not a problem with fugitive vapor migration in the area immediately surrounding One East Camelback. No further action is planned under this Technical Direction Document (TDD). If you have any questions regarding this report, please do not hesitate to contact this office at (415) 981-2811.

Respectfully Submitted,

John Gregory
Superfund Technical Assessment and Response Team Member

cc: OSC Zuroski
File

Source: USGS Pheonix Quadrangle 1: 250,000 (Topographic)

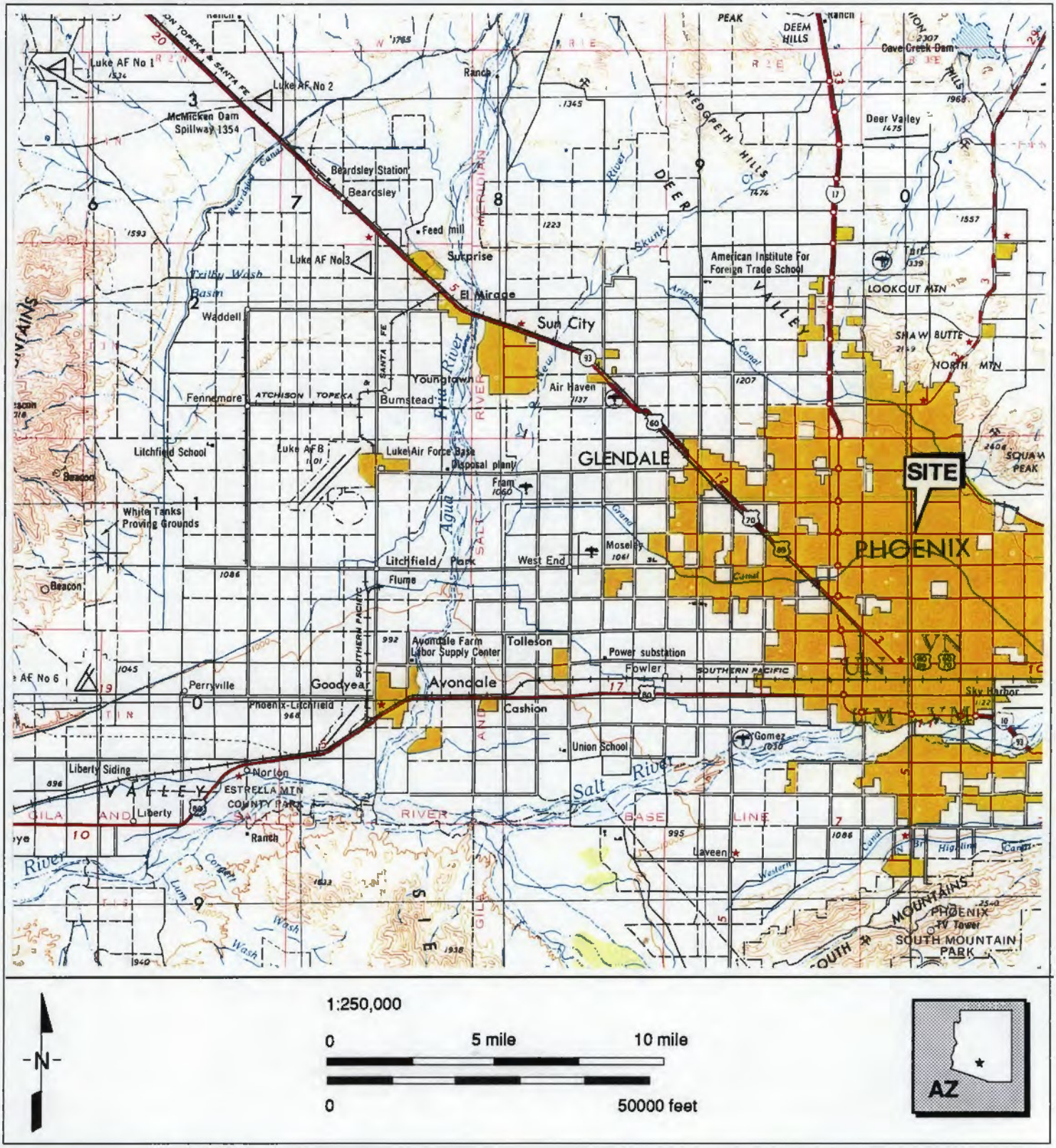

Figure 1

SITE LOCATION MAP

Phoenix Hydrocarbons

Maricopa County, Arizona

PAN: 0189-PHRZ-XX TDD: 09-9706-0001

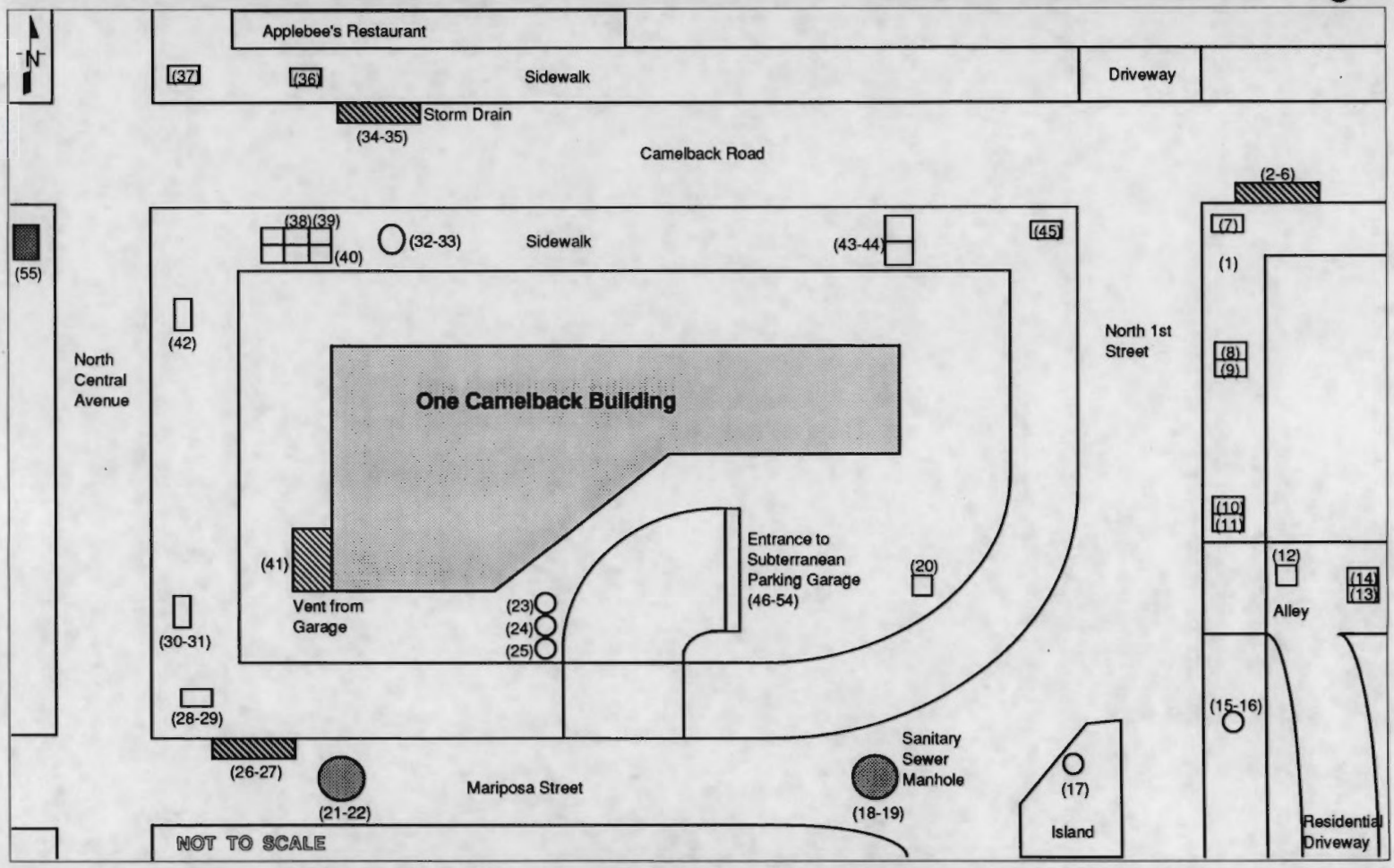

Figure 2

SITE MAP

Phoenix Hydrocarbons Site, Phoenix, Arizona

PAN: 0189-PHRZ-XX TDD: 09-9706-0001

Table 1.
LEL, CO, %O_2, FID, AND PID, Field Data
Phoenix Hydrocarbon Site
PAN: 0189PHRZXX TDD: 09-9706-0001

		Reading				
Location	Time	LEL (%)	CO (ppm)	O_2 (%)	FID (ppm)	PID (ppm)
(1) Background, Corner of 1st and Camelback	10:03	Reading Not Taken	Reading Not Taken	Reading Not Taken	2.31	0.07
(2) Storm drain at 1st and Camelback, Southeast Corner, North Side of Camelback, 0' BGS	10:03	Reading Not Taken	Reading Not Taken	Reading Not Taken	2.47	0.40
(3) Storm drain at 1st and Camelback, Southeast Corner, North Side of Camelback, 1' BGS	10:03	0	10	20.6	2.47	0.47
(4) Storm drain at 1st and Camelback, Southeast Corner, North Side of Camelback, 2' BGS	10:03	0	0	20.6	2.47	0.49
(5) Storm drain at 1st and Camelback, Southeast Corner, North Side of Camelback, 3' BGS	10:03	0	0	20.6	Reading Not Taken	Reading Not Taken
(6) Storm drain at 1st and Camelback, Southeast Corner, North Side of Camelback, 4' BGS	10:03	0	0	20.6	Reading Not Taken	Reading Not Taken
(7) Signal Box, 1st and Camelback, SE Corner	10:07	Reading Not Taken	Reading Not Taken	Reading Not Taken	2.70	1.53
(8) Signal Box, 100' South of Camelback, East Side of 1st (Northern One)	10:09	0	0	20.7	2.50	0.30
(9) Signal Box, 100' South of Camelback, East Side of 1st (Southern One)	10:10	0	0	20.7	2.50	0.30
(10) Signal Box, North of Residential Driveway on 1st (Northern One)	10:14	0	0	20.7	2.60	0.24
(11) Signal Box, North of Residential Driveway on 1st (Southern One)	10:16	0	0	20.7	2.45	0.15
(12) Water Box in Driveway/Alley	10:19	0	0	20.4	2.6	2.6

Location	Time	Reading				
		LEL (%)	CO (ppm)	O_2 (%)	FID (ppm)	PID (ppm)
(13) Signal Box, in Alley, West of Telephone Pole (Southern One)	10:23	0	0	20.7	2.95	0.32
(14) Signal Box, in Alley, West of Telephone Pole (Northern One)	10:27	4	0	20.4	2.70	19.00
(15) Water Hole, East Side of 1st on Sidewalk, Near Intersection with Mariposa, 6" BGS	10:30	0	0	20.8	2.70	0.18
(16) Water Hole, East Side of 1st on Sidewalk, Near Intersection with Mariposa, 1.5' BGS	10:30	0	0	20.8	2.70	0.30
(17) Sprinkler Valve Box, On Island at Mariposa and 1st, Plastic	10:35	4	0	20.7	3.10	927
(18) Sanitary Sewer Manhole, South of One Camelback, Near Intersection of Mariposa and 1st	10:43	4	0	20.7	4.84	2.60
(19) Sanitary Sewer Manhole, South of One Camelback, Near Intersection of Mariposa and 1st, 5'BGS	10:43	4	0	20.4	11.94	9.25
(20) Service Box, Green, on South Side of One Camelback, on Lawn Next to Sidewalk, East of Driveway	10:56	4	0	20.6	4.45	5.70
(21) Sanitary Sewer Manhole, South of One Camelback, on Mariposa, 100' East of Central	11:02	4	0	20.7	4.43	3.59
(22) Sanitary Sewer Manhole, South of One Camelback, on Mariposa, 100' East of Central, 5' BGS	11:02	4	0	20.7	7.60	19.83
(23) Irrigation Control Valve, South Side of One Camelback, West of Driveway (Northern One)	11:22	4	0	20.7	4.53	2.33
(24) Irrigation Control Valve, South Side of One Camelback, West of Driveway (Middle One)	11:22	4	0	20.7	4.47	4.13
(25) Irrigation Control Valve, South Side of One Camelback, West of Driveway (Southern One)	11:22	4	0	20.7	4.32	3.70
(26) Storm Drain, 50' East of Central, on North Side of Mariposa, South of One Camelback	11:35	0	2	20.8	4.40	0.14

Location	Time	Reading				
		LEL (%)	CO (ppm)	O_2 (%)	FID (ppm)	PID (ppm)
(27) Storm Drain, 50' East of Central, on North Side of Mariposa, South of One Camelback, 5' BGS	11:35	0	0	20.9	4.38	0.16
(28) APS Electrical Box, Intersection of Central and Mariposa, Northeast Corner, in Front of Stairs	11:43	0	0	20.8	4.32	0.63
(29) APS Electrical Box, at Central and Mariposa, Northeast Corner, in Front of Stairs, 2' BGS	11:43	4	0	20.7	4.56	1.08
(30) APS Electrical Box, West of One Camelback, On East Side of Central, Farthest South	11:52	4	0	20.9	4.19	0.39
(31) APS Electrical Box, West of One Camelback, On East Side of Central, Farthest South, In Conduit	11:52	Reading Not Taken	Reading Not Taken	Reading Not Taken	4.28	3.10
(32) Manhole, North of One Camelback, East of Six Boxes, with "AFCO A153324" On It	12:00	0	2	20.9	4.46	0.34
(33) Manhole, North of One Camelback, East of Six Boxes, with "AFCO A153324" On It, 2' BGS	12:00	0	2	20.8	4.68	0.90
(34) Storm Drain, On Camelback, North of One Camelback, North Side of Street, 100' East of Central	12:10	0	0	20.9	4.45	0.22
(35) Storm Drain, North of One Camelback, North Side of Street, 100' East of Central, 4' BGS	12:10	Reading Not Taken	Reading Not Taken	Reading Not Taken	4.66	0.92
(36) Signal Box, On Camelback, North of One Camel back, North Side of Street, West of Storm Drain	12:15	4	0	20.1	4.51	7.71
(37) Signal Box, at Intersection of Camelback and Central, Northeast Corner, Traffic Between Lights	12:20	4	0	20.8	4.34	2.20
(38) Water Valve Control Boxes, North of One Camelback, 50' East of Central, NM	12:25	4	0	20.8	4.24	2.70
(39) Water Valve Control Boxes, North of One Camelback, 50' East of Central, NE	12:25	4	0	20.5	4.83	0.58
(40) Water Valve Control Boxes, North of One Camelback, 50' East of Central, SE	12:25	4	0	20.5	4.31	9.85

Location	Time	Reading				
		LEL (%)	CO (ppm)	O_2 (%)	FID (ppm)	PID (ppm)
(41) Vent, Southwest Corner of Building, Northeast of Intersection of Central and Mariposa	12:35	0	0	20.8	4.53	0.25
(42) APS Electrical Box, West of One Camelback, On East Side of Central, Near Traffic Light	12:37	0	0	20.8	4.60	0.38
(43) Water Box, 20' West of 1st Street, North of One Camelback, South Side of Camelback	12:45	0	0	21.0	4.32	0.15
(44) Water Box, 20' West of 1st Street, North of One Camelback, South Side of Camelback, 6' BGS	12:45	0	0	20.8	4.75	0.76
(45) Signal Box, at Intersection of Camelback and First, Southwest Corner, Between Signal Lights	12:51	0	0	20.9	4.56	0.14
(46) Subterranean Parking Garage, One Camelback, Just Outside Elevator	13:00	0	0	20.8	4.75	0.30
(47) Subterranean Parking Garage, One Camelback, Start of Level 5	13:00	0	0	20.8	4.90	0.35
(48) Subterranean Parking Garage, One Camelback, Sump #3	13:00	8	5	20.3	834	333
(49) Subterranean Parking Garage, One Camelback, Sump #2	13:09	4	2	20.8	17.18	9.25
(50) Subterranean Parking Garage, One Camelback, Treatment Room	13:12	0	4	21.0	8.00	1.76
(51) Subterranean Parking Garage, One Camelback, Sump #1	13:12	12	4	20.7	1400	150
(52) Subterranean Parking Garage, Level 5, Sanitary Sewer Manhole, Outside Treatment Room, Closer	13:17	4	0	20.8	50.15	30.12
(53) Subterranean Parking Garage, Level 5, Sanitary Sewer Manhole, Outside Treatment Room, Farther	13:17	4	0	20.6	9.25	2.13
(54) Subterranean Parking Garage, One Camelback, Sump #6	13:25	4	0	19.9	125	10.78

Location	Time	Reading				
		LEL (%)	CO (ppm)	O_2 (%)	FID (ppm)	PID (ppm)
(55) Irrigation Canal, Intersection of Central and Camelback, Southwest Corner of Intersection	13:35	0	0	21.1	4.18	0.24

ECOLOGY & ENVIRONMENT, INC.
Superfund Technical Assessment and Response Team

Phoenix Hydrocarbons, Maricopa County, Arizona
PAN: 0189PHRZXX TDD: 09-9706-0001
Photographer: John Gregory Date: June 6, 1997
(START Member)

Photo 1: One Camelback Property

Photo 2: Traffic signal boxes, north of residential driveway (locations 10 and 11)

ECOLOGY & ENVIRONMENT, INC.
Superfund Technical Assessment and Response Team

Phoenix Hydrocarbons, Maricopa County, Arizona
PAN: 0189PHRZXX TDD: 09-9706-0001
Photographer: John Gregory Date: June 6, 1997
(START Member)

Photo 3: Water service box in alley (location 12)

ECOLOGY & ENVIRONMENT, INC.
Superfund Technical Assessment and Response Team

Phoenix Hydrocarbons, Maricopa County, Arizona
PAN: 0189PHRZXX TDD: 09-9706-0001
Photographer: John Gregory Date: June 6, 1997
(START Member)

Photo 4: Sprinkler control on island, at intersection of 1st and Maricopa (location 17)

Photo 5: Water service on Camelback (locations 43 and 44)

ECOLOGY & ENVIRONMENT, INC.
Superfund Technical Assessment and Response Team

Phoenix Hydrocarbons, Maricopa County, Arizona
PAN: 0189PHRZXX TDD: 09-9706-0001
Photographer: John Gregory Date: June 6, 1997
(START Member)

Photo 6: Sump #3, in basement of One Camelback (location 48)

Photo 7: Carbon filter treatment system in basement (location 51)